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claret grape, as mentioned in Mr. Blaxland's letter, printed in the 41st volume of the Society's Transactions.

On tasting the samples, it was the general opinion that both of them are decidedly better than the wine for which, in 1823, Mr. B. obtained the large silver medal of the Society, and that they were wholly free from the earthy flavour which unhappily characterises most of the Cape wines. The colour of the wine is a tawny red.

No. II.

PIGMENTS FROM CANADA.

The GOLD ISIS MEDAL was voted to W. GREEN, Esq. of Quebec, for his Communication respecting certain Pigments, the produce of Canada; Specimens of which have been placed in the Society's Repository.

SIR,

Quebec, 27th December, 1827.

BY desire of his Excellency the Earl of Dalhousie, I have the honour to communicate to you, for the information of the Society of Arts, some specimens of colours, which I prepared from materials produced in this country; and which, having been submitted to the Literary and Historical Society of Quebec, have been honoured by that order for their transmission to you which I now obey.

I am, Sir, &c. &c.

W. GREEN,

Secretary.

A. AIKIN, Esq.

Secretary, &c. &c.

At a meeting of the Literary and Historical Society of Quebec, held at the Castle of St. Lewis, in the city of Quebec, this 1st day of February, 1827,

Present, His Excellency the Earl of Dalhousie, Governor-in-chief, and other Members.

William Green, Secretary, presented to the Society a box, containing specimens of colours by him prepared from materials produced in Lower Canada, accompanied by a paper in explanation of them, which is read. And on the motion of his Excellency the Earl of Dalhousie, it is ordered, That the thanks of this Society be given for this communication, and that the same be laid before the Society for the Encouragement of Arts, Manufactures, and Commerce, in London.

(Certified)

W. GREEN,
Secretary and Treasurer.

*Memoranda respecting Colouring Materials produced
in Canada.*

THIS country produces various substances fit for the use of artists as pigments.

In the parish of L'Ancienne Lorette, and in that of St. Augustin, near Quebec, there exists in alluvial soil, at the depth of three feet, a horizontal stratum of fine yellow clay (No. 5). This earth has a very deep and rich hue, and, with white in various proportions, gives all the tints which the best yellow ochres afford. Burnt, it gives a light red, resembling that formed by burning yellow ochre, but inclining more to orange. It is an opaque colour,

and mixes well with oil or with water, and in oil it dries well.

The Magdalen Islands, in the Gulf of St. Lawrence, produce a red earth (No. 3), which is brought to Quebec in lumps. In these are interspersed minute portions of some white substance, which seems of the same consistence as the red earth. The texture of this earth is extremely fine, and the quantity of foreign gritty matter deposited on washing it in water inconsiderable. It nearly resembles Indian red. I do not perceive any inferiority, or any other difference than this, that the Canadian earth, in its natural state, is rather the paler of the two, with more of the hue of red lake; yet it is a very deep red, quite as deep as can be required for any purpose in painting. Burnt (No. 4), it becomes more bright. With white the tints are all beautiful. Those formed from the raw material partake of the hue of red lake, and those made with burnt earth seem tinged with vermilion.

This substance, both in its natural and in its burnt state, might be worthy of the attention of artists, being quite as beautiful, and probably as useful, as Indian red. In price there is great disparity; the red earth being sold at Quebec for three-pence a pound (which is only half the price of common red ochre), and the price of Indian red in London being above two shillings an ounce. Yet all the red ochres, whether native or artificial, which are used in the arts, are, with the single exception of Indian red, inferior to this earth. The red earth is somewhat transparent, but by no means sufficiently so to be removed from the class of opaque colours. It mixes with oil and with water; and in oil it dries readily.

At St. Paul's bay, on the north shore of the St. Lawrence, an earth (A) is washed down from the mountains, which is of less weight than most other earths. In its dry state it is of a rich cinnamon colour. In oil it is transparent, and of a tint intermediate between those of raw and of burnt umber. Made red hot, and extinguished in water, a sulphureous odour is given out; and the burnt matter, well washed and dried, inclines rather more towards red than before, but loses its transparency. In this state it would probably have no peculiar utility. The transparent tint it affords with oil in its raw state might be very useful, unless the sulphur it appears to contain should impair its properties. This, however, may not be the case, as vermilion, which is a sulphuret (of mercury) is durable, whether combined with other colours in oil or not. As a colour for glazing, this circumstance forms a slighter objection than it might do were the substance used in combination with white or other colours. Indeed, it appears best adapted for glazing, as there is no peculiar beauty in the tints it forms with opaque colours.

At St. Foy,* I discovered, imbedded in whitish clay, numerous nodules of a brown substance (B) which contains iron. They are friable. They yield a deep transparent brown, which dries readily, and resembles umber, to which it is superior. It is improved by burning.

Many of the spontaneous vegetable productions of this country are capable of affording brilliant and durable colours to the painter and the dyer. The Indians extract from the root (C) of a wild plant, which bears some resemblance to madder, a very bright and permanent red dye, with which they tinge their porcupine quills, elk

* Five miles west of Quebec.

hair, and other substances. A red lake (No. 2) has been extracted from it, by boiling it in a solution of alum in water, (after having separated a quantity of brown colouring matter, by washing the root in cold water, in which the brown, but not the red, matter is soluble,) and precipitating the red substance from the aluminous solution by means of an alkali. The hue of this lake, when used in oil, is equal in beauty, but not in intensity, to that of the finest carmine, and resists the action of light much longer. Patches of various specimens of carmine and red lake from cochineal were painted in oil on a window-pane, which all faded more or less, and some nearly disappeared, on being exposed to a strong light for two weeks; while patches of red lake from the Indian plant still remain unchanged, after exposure in a similar situation during two years.

This plant is called by the Hurons *Tsavooyan*. It is found of superior quality in the interior. Its root, when dry, is scarcely thicker than a coarse thread, and runs horizontally through the loose soil formed in the woods by the decay of fallen leaves. Its stalk is four-sided, furnished with short retroverted hairs, and is surrounded at intervals by small oval leaflets, forming a star. The stalk, from its length and weakness, becomes procumbent. *Galium tinctorium* is said to be its name. On extracting this root from the soil, it frequently is quite colourless and transparent; but in a few minutes after extraction, it acquires its dark hue, and the property of yielding its brown and its red colours. The brown matter, separated by water previously to the extraction of the red, may be precipitated by alum, and is a deep reddish-brown (No. 1), of high beauty, and is very durable, fit for use in oil or in water.

Another plant grows in similar situations, which has the same name of *Tsavooyan*, but which does not resemble madder. The roots, and the roots only, of both *Tsavooyans* have some external resemblance to each other, but differ in many respects. The latter is bright yellow, the former deep brown. The latter is not used in dyeing, but is valued as affording an agreeable bitter, and as having the property, when chewed, of curing some kinds of sore mouth.

The Indians dye a very bright and durable yellow with the seeds of a shrub common on the banks of rivers and lakes. The leaves are fragrant, the seeds very aromatic, and the plant has the aspect of a willow. It is probably *Myrica gale*. The Hurons call it *Ootsi gooara osookwa*, which signifies yellow dye stuff.

A very rich and durable brown for dyeing, and a lake of the same colour for painting (No. 6), are afforded by the outer husk of the Canadian "butter-nut" (*Juglans cathartica*). The colour is copiously extracted by infusion in warm water, and may be precipitated either by alum or muriate of tin; and if by the latter, it will dry the quicker in oil. It is of a tint intermediate between those of asphaltum and prussiate of copper.

I am not aware that any of the above-mentioned substances have ever before been prepared, or proposed as a colouring material for the use of artists.

W. GREEN.

Quebec, 1827.

Specimens of the pigments were put into the hands of Mr. Brockedon and of Mr. C. Varley, for trial. The

former gentleman reported to the Committee, that the red lake from the *Galium tinctorium*, on comparison with fine English and French madder lakes, differs from them in being a purer red, unmixed with yellow or purple; that the brown red lake, obtained also from the *Galium tinctorium*, is far superior to that at present in the shops, prepared by torrefying madder lake. The red ochre No. 4 gives a tint quite equal to the average quality of Indian red, though not as good as the best kinds. The yellow ochre No. 5, and the red produced by burning the same, are respectively quite as good as those usually met with.

Mr. B. also stated, that he has recently made trial of the common black manganese of the shops. He finds it to be a very useful grey colour, with much body, and possessing the property of drying almost immediately with oil.

The result of Mr. C. Varley's experiments is contained in the following letter:—

46, *Holywell Street, Millbank, Westminster,*

SIR,

February 20, 1828.

I have compared the colours sent by Mr. Green from Canada with those in common use, and find them generally very good. The dark reddish brown No. 1 is a very useful colour, being nearly the same tint, but richer than madder brown.

The lake No. 2 is a very valuable colour: it is a little flesh coloured, or yellowish, when compared with Mr. Field's madder pink, and therefore not quite equal to it, but is as often wanted: it is much higher in tone than vermilion.

The red ochre No. 3 is not wanted; that marked 4, when a little dirty, giving the same tint.

The red ochre No. 4, and the yellow ochre No. 5, are so perfectly like the English ochres as to be equally good.

The brown ochre marked A is not quite so rich as our Roman ochre.

The brown No. 6, and that marked B, are not wanted, being exactly of the same colour as English coals, which, when finely ground, give an excellent brown, a little darker than Vandyke-brown. I may also add, that Welch coal gives a still darker brown, so exactly like seppia in colour, that one may be used for the other. The paper which accompanies this has the Canadian colours side by side with the English colours.

I am, Sir, &c. &c.

CORNELIUS VARLEY.

A. AIKIN, *Esq.*

Secretary, &c. &c.